

ABSTRACT

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A polymer-electrolyte fuel cell, comprising: an electrolyte membrane-electrode assembly comprising a polymer-electrolyte membrane, and a pair of gas-diffusion electrodes sandwiching said polymer-electrolyte membrane; a first electroconductive separator having a gas channel for supplying an oxidant gas to one of the gas-diffusion electrodes of said pair; and a second electroconductive separator having a gas channel for supplying a fuel gas to the other of the gas-diffusion electrodes of said pair; wherein the polymer-electrolyte fuel cell is characterized in that at least one of said first electroconductive separator and said second electroconductive separator comprises a metal substrate and an electroconductive resin layer provided on said metal substrate and contacting said electrolyte membrane-electrode assembly, and said electroconductive resin layer comprises a resin having water-repellant or basic radicals, and an electroconductive particulate substance.